

**REMARKS**

Favorable reconsideration of this application is respectfully requested in view of the foregoing amendments and the following remarks.

Claims 1, 3-9, and 11-13 have been amended. Claims 14-20 have been added. Therefore, claims 1-20 are pending in the present application, of which claims 1, 11, and 20 are independent.

In the Office Action, claims 1-13 are rejected under 35 U.S.C. §102(e) as being anticipated by Shields et al. (U.S. Pat. App. Pub. No. 2002/0196827).

The above rejection is respectfully traversed for at least the following reasons.

**Claim Rejection Under 35 U.S.C. §102**

The test for determining if a reference anticipates a claim, for purposes of a rejection under 35 U.S.C. § 102, is whether the reference discloses all the elements of the claimed combination. As noted by the Court of Appeals for the Federal Circuit in *Lindemann Maschinenfabrick GmbH v. American Hoist and Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984), in evaluating the sufficiency of an anticipation rejection under 35 U.S.C. § 102, the Court stated:

"Anticipation requires the presence in a single prior art reference disclosure of *each and every element of the claimed invention, arranged as in the claim.*" (*Italicized Emphasis added*).

Therefore, if the cited reference does not disclose each and every element of the claimed invention, then the cited reference fails to anticipate the claimed invention and, thus, the claimed invention is distinguishable over the cited reference.

Claims 1-13 are rejected under 35 U.S.C. §102(e) as being anticipated by Shields et al. (U.S. Pat. App. Pub. No. 2002/0196827).

*Independent claims 1 and 11*

Claim 1 has been amended to recite, among other things,

"said recombination control part, after generation of said plurality of excitons, causes recombination of the plurality of excitons excluding the single exciton in said exciton generation part, and subsequently changes said band structure to cause recombination of said single exciton in said exciton generation part."

Similarly, claim 11 has been amended to recite, among other things,

"causing recombination of the plurality of excitons excluding said single exciton in said medium; and changing said band structure after said causing recombination to cause recombination of said single exciton in said medium."

Support for these claim amendments may be found in the original disclosure, for example, on page 8, line 8 to page 10, line 6 of the specification and in FIG. 3A.

The Shields et al. reference recognizes that there is jitter among the recombinations of a plurality of excitons (see, for example, the Background section of the Shields et al. reference). Thus, the Shields et al. reference shows a wavelength-tunable filter that may be used to block photons of a certain undesirable energy that causes the jitter of the photon source (see, for example, paragraphs [0023]-[0026] in the Shields et al. reference). This filter is integrated within the

photon source itself or is provided on the photon source. However, the Shields et al. reference fails to show, among other things, that the recombination control part causes "recombination of the plurality of excitons excluding the single exciton..." and subsequently changes "said band structure ... to cause recombination of said single exciton," wherein the "band structure" refers to "a band structure holding a single exciton" as claimed.

Because the Shields et al. reference fails to show each and every element as arranged in amended claims 1 and 11 and their respective dependent claims 2-10 and 12-13, it fails to anticipate claims 1-13. Accordingly, withdrawal of the rejection of claims 1-13 under 35 U.S.C. §102(e) and their allowance are respectfully requested.

*New dependent claims 14-19*

New claims 14-19 are allowable by virtue of their dependence on independent claims 1 and 11, which are allowable as discussed above.

*New independent claim 20*

New claim 20 is originally-filed claim 5 rewritten in independent form with minor corrections of typographical errors (for example, changing "generator" to --generation-- and "a" to --an--).

The Office Action rejects originally-filed claim 5 (and thus, new claim 20) based on an assertion that the teachings of the Shields et al. reference at paragraph [0018] and [0110]-[0111] "suggest" such claimed features.

As noted earlier, anticipation under 35 U.S.C. §102 requires "*the presence* in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim." - not mere *suggestion* of claimed elements. It is respectfully submitted that while the Shields et al. reference shows the use of InGaAs and InAlAs materials for various layers in a photon source, it provides no showing, or even any *suggestion*, of the use of GaSb or AlAs as claimed.

Because the Shields et al. reference fails to show each and every element as arranged in new claim 20, it fails to anticipate claim 20. Accordingly, it is respectfully submitted that claim 20 is allowable over the references of record.

**Conclusion**

In light of the foregoing, withdrawal of the rejections of record and allowance of this application are earnestly solicited.

Should the Examiner believe that a telephone conference with the undersigned would assist in resolving any issues pertaining to the allowability of the above-identified application, please contact the undersigned at the telephone number listed below. Please grant any required extensions of time and charge any fees due in connection with this request to deposit account no. 50-4610.

**PATENT**

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Respectfully submitted,

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